



CBV734EW Series

***PacketCable 1.5 and DOCSIS/EURODOCSIS 2.0 Compliant
4 Ports Ethernet Cable Modem with Wireless and EMTA
User's Manual***

**Revision 1.0
May 2008**

FCC Statement

This device complies with Class B Part 15 of the FCC Rules. The device generates, uses and can radiate radio frequency energy and, if not installed and used as instructed, may cause harmful interference to radio communication. Only Coaxial cables are to be used with this device in order to ensure compliance with FCC emissions limits. Accessories connected to this device by the user must comply with FCC Class B limits. The manufacturer is not responsible for any interference which results from use of improper cables, or which results from unauthorized changes or modifications to the device.

"A Minimum 26 AWG Line Core should be used for connection to the cable modem"

Warranty

Items sold by manufacturer/distributor/agent, hereinafter called "Seller", are warranted only as follows: Except as noted below Seller will correct, either by repair or replacement at its option, any defect of material or workmanship which develops within one year after delivery of the item to the original Buyer provided that evaluation and inspection by Seller discloses that such defect developed under normal and proper use. Repaired or replaced items will be further warranted for the unexpired term of their original warranty. All items claimed defective must be returned to Seller, transportation charges prepaid, and will be returned to the Buyer with transportation charges collect unless evaluation proves the item to be defective and that the Seller is responsible for the defect. In that case, Seller will return to Buyer with transportation charge prepaid. Seller may elect to evaluate and repair defective items at the Buyer's site. Seller may charge Buyer a fee (including travel expenses, if needed) to cover the cost of evaluation if the evaluation shows that the items are not defective or that they are defective for reasons beyond the scope of this warranty.

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1. Introduction

The CBV734EW is a Voice over IP Wireless Residential Gateway integrated with Cable Modem which allows you implement your VoIP phone call directly through Cable Modem Broadband Network service with its built-in PacketCable 1.5 and DOCSIS/EURODOCSIS 2.0 compliant specification.

Equipped with two standard phone ports, CBV734EW series could easily provide end-users low-cost, long-distance calling, faxing, and a host of advanced service including CBV734EW-to-Phone, Phone-to-CBV734EW, and CBV734EW-to-CBV734EW.

And with the integration of 4 ports switch and IEEE 802.11g wireless functionality, the CBV734EW series could also be used as a Wireless Cable Modem Residential Gateway in your home or small office. The ability to route data information into your broadband network could help you easily extend your local network via wire or wireless.

The CBV734EW is MGCP/SIP compliant and has been tested with most major VoIP Softswitch vendors' Call Management systems. And it also has voice support that includes hardware based Quality of Service (QoS), voice compression (popular voice CODECs G.711, G.729A, G.723.1, and so on), echo cancellation, dynamic latency (jitter) buffers, silence suppression, and comfort noise generator.

1.1 Features

- PacketCable 1.5 standard compliant
- DOCSIS /EURODOCSIS 2.0 standard compliant.
- Support PacketCable MGCP (Media Gateway Control Protocol)
- SIP (Session Initiation Protocol) compliant
- 4 standard RJ45 connector for 10/100BaseT Ethernet with auto-negotiation MDIX functions
- USB 1.1 12Mbps
- Two Rj11 Foreign Exchange Station (FXS) ports for IP telephony
- QoS enhancement
- MSO SNMPv3 remote network management
- Provide MIBs DOCSIS 1.0/1.1/2.0
- Support simultaneous voice and data communications
- Echo Cancellation
- Voice Active Detection (VAD)
- Comfort Noise Generation (CNG)
- Web Browser Management auto detect network status
- Build-in IEEE802.11g module as AP with miniPCI form factor

1.2 System Requirements

- IBM Compatible, Macintosh or other workstation supports TCP/IP protocol.
- An Ethernet port supports 10Base-T/100Base-TX Ethernet connection or USB-equipped PC.
- Subscribed to a Cable Television company for Cable Modem services.

1.3 Unpacking and Inspection

Included in the kit is the following:

- 1 x EMTA CBV734EW
- 1 x Quick Installation Guide
- 1 x RJ-45 CAT 5 Cable
- 1 x 15V/1.0A Power Supply Adaptor
- 1 x CD-ROM containing USB Driver & User's Manual
- 1 x 6P4C Telephone Cord
- 1 x USB Cable

If any of above items lost or damaged, please contact your retailer or ISP for assistance.

1.4 Safety Precautions

For your protection, observe the following safety precautions when setting up and using your equipment. Failure to observe these precautions can result in serious personal injury and damage to your equipment.








- Make sure the voltages and frequency of the power outlet matches the electrical rating labels on the AC Adapter.
- Do not place any object on top of the device or force it into a confined space.
- Never push objects of any kind through openings in the casing. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that could cause fire, electrical shock, or damage to the equipment.
- Whenever there is danger of lightning, disconnect the power cable and the Hybrid-Fiber Coax cable from the cable modem to prevent damage to the unit. The use of an AC protection device will not completely protect the cable modem product from damage caused from the transmission across the Hybrid-Fiber Coax network.

2. Hardware Overview

2.1 Front Panel and LEDs

There are fourteen Light-Emitting-Diodes (LEDs) located on the front panel top provide status information to the user.

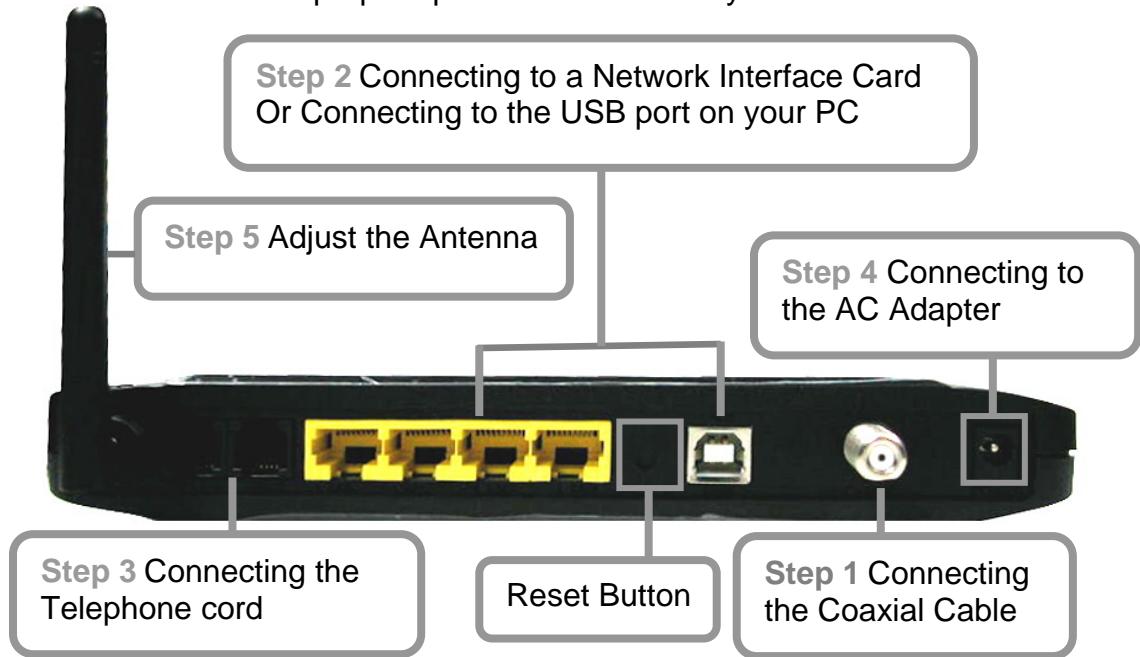


LED	NAME	COLOR	MODE	STATUS
	Power	Green	On	Connected with power
			Off	Power failure or disconnect
	Cable	Green	Blinking	TFTP/DHCP in process
			On	Cable connected
	Tx	Green	On	Downstream Data traffic
			Off	No Data Traffic
	Rx	Green	On	Upstream Data traffic
			Off	No Data Traffic
1	LAN 1	Green	Blinking	Connecting
			On	Ethernet port 1 linked
			Off	Disconnected
2	LAN 2	Green	Blinking	Connecting
			On	Ethernet port 2 linked
			Off	Disconnected
3	LAN 3	Green	Blinking	Connecting
			On	Ethernet port 3 linked
			Off	Disconnected
4	LAN 4	Green	Blinking	Connecting
			On	Ethernet port 4 linked
			Off	Disconnected
	USB	Green	Blinking	USB activity
			On	USB linked
	Voice Message	Green	Blinking	Off hook
			On	VoIP linked
	TEL1	Green	Blinking	Registered to the server
			On	New voice message or incoming call

			Off	Not registered to the server
TEL2	TEL2	Green	Blinking	Registered to the server
			On	New voice message or incoming call
			Off	Not registered to the server
Wifi	Wifi	Green	Blinking	No phone call
			On	Connecting
WPS	WPS	Blue	Blinking	WPS Activating
			On	WPS Connected
			Off	No WPS Connection

2.2 Rear Panel and Hardware Connection

This chapter describes the proper steps for connecting your cable modem. Please be sure to follow the steps in the sequence outlined below. Failure to do so could result in improper operation or failure of your cable modem.



Step 1:

Connect a cable by feeding the F-connector on the back of the cable modem. Ensure the center conductor of the 75 ohm coaxial cable is inserted directly into the center of the F-connector. Secure the coaxial cable by carefully threading the outer shell of the coaxial cable connector onto the F-connector in a clockwise direction until tight. Be careful not to over-tighten the connector or you may damage either the connector or the cable modem.

Step2: Connect the cable modem to an IEEE 802.3 10BaseT / 802.3u 100Base-TX Network using a RJ-45 male-terminated Ethernet cable or a USB cable to the PC. This cable modem equips with two Ethernet ports, you can connect two PCs to the cable modem at the same time if necessary.

Step 3: Connect the telephone sets to TEL1 and TEL2. Use RJ-11 telephone line to connect TEL1/TEL2 port on the cable modem and telephone socket on telephone.

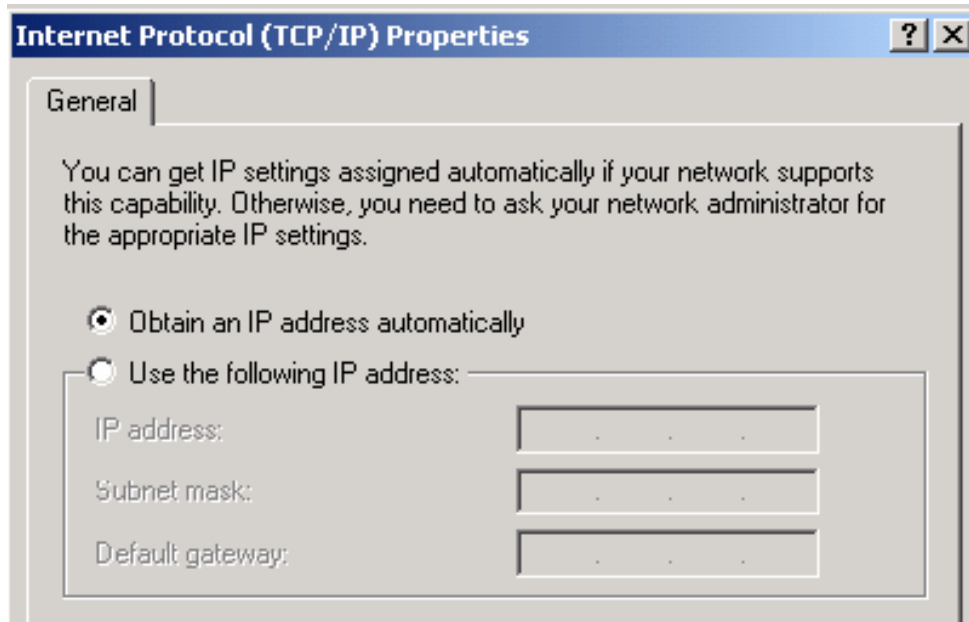
Step 4: Connect the AC Adapter to the cable modem by inserting the barrel-shaped connector into the mating power connector on the back of the cable modem. Exercise carefully to ensure the connectors are properly aligned prior to insertion and ensure the two connectors engage completely. The cable modem is shipped with an AC adapter. Remember to use only power adapter that came with the cable modem. Other power adapters might have voltages that are not correct for your particular cable modem. Using a power adapter with the wrong voltage can damage the cable modem.

Step 5: Adjust the antenna if necessary.

3. Ethernet Installation

The LAN port you are using is auto-negotiating 10/100Mbps (Switch) Ethernet Interface. You can use the Ethernet port to connect to the Internet with an Ethernet network device such as NIC/Hub/Switch through RJ45.

Before you connect to and install the cable modem, please set the IP address to "Obtain an IP address automatically" as below and do ensure the TCP/IP protocol is installed on your system and configured correctly in your PC.



Following is an example of configuring the TCP/IP Protocol on Windows 98 Operating Systems:

1. Click **Start→Settings→Control Panel**. Double click on the **Network** icon click **Properties**.
2. A list of installed network components appears. Look for an entry named TCP/IP. This entry may be followed by an arrow and a description of the NIC hardware device installed in the computer. If you don't see "TCP/IP" listed anywhere in the "The following network components are installed" box, click the **Add** button, choose **Protocol**, and click the **Add** button. Select "Microsoft" as the manufacturer and then scroll down in the list on the right to find "TCP/IP". If you see "TCP/IP" listed, proceed to step 4.
3. Click the **OK** button. You will be prompted to insert the Windows 98 installation/upgrade CD.
4. Scroll down in the box until you find a line that says "TCP/IP -> " followed by the name of your Ethernet adapter. Click on **Properties** and choose "Obtain an address automatically" which means that your PC has been configured to use DHCP (Dynamic Host Configuration Protocol).
5. Click **OK**.

Congratulations! You have successfully set up your cable modem.

4. USB Driver Installation

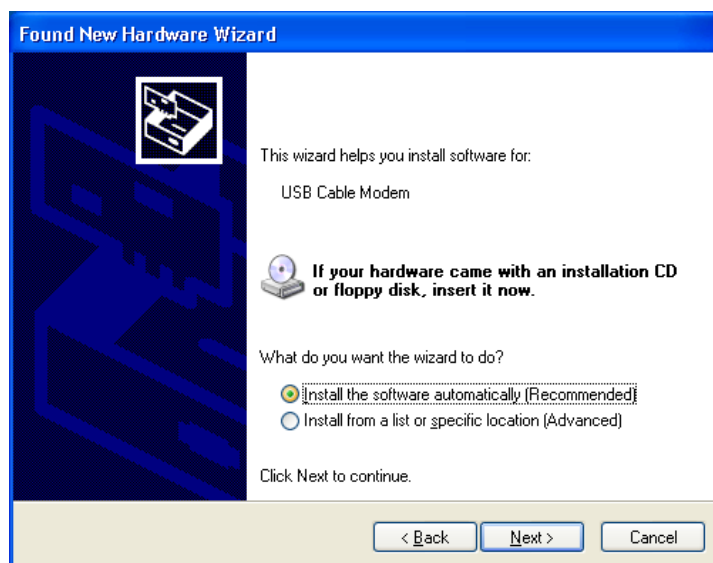
Using the USB port to connect to the Internet allows you to install the cable modem more quickly and easily than connecting to the Internet using the Ethernet port, since you do not need to install a network interface card (NIC).

4.1 Windows XP

1. Connect USB cable from PC to cable modem.
2. Connect RF cable and power on Cable Modem. Wait until it register, it will take about 40 seconds to 4 minutes depends on network traffic. Cable Modem may reboot if you previously connect it through Ethernet port.
3. Windows will prompt new hardware found, insert the Driver CD into your CD-ROM drive.
4. You may seed this window if you had update your Windows XP to Service Pack 2. Select "Yes, this time only" and then click **Next**.



5. Select "Install the software automatically (Recommended)" and then click **Next**.



6. Windows will locate the driver automatically. Please click **Continue Anyway** to continue the installation process.



7. Windows shall find the location of USB driver and complete the installation. Click **Finish**.

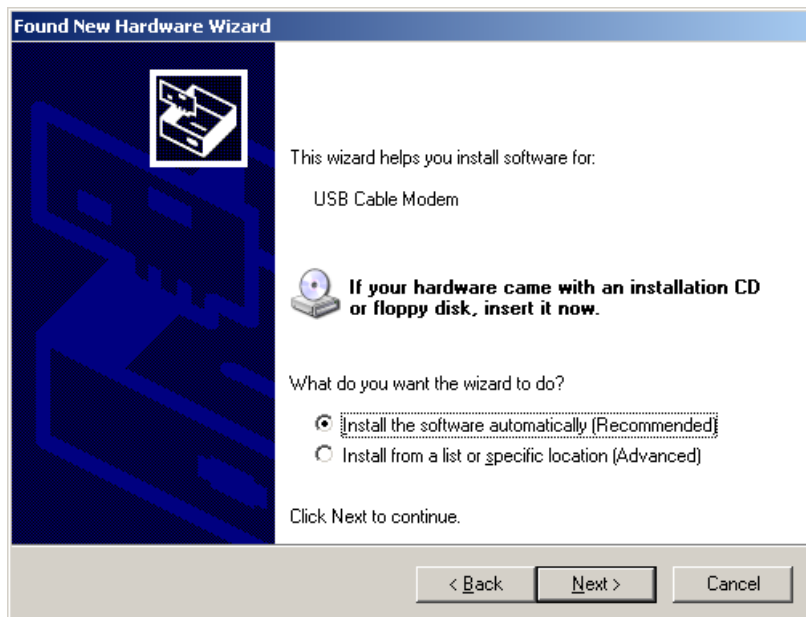


4.2 Windows 2003

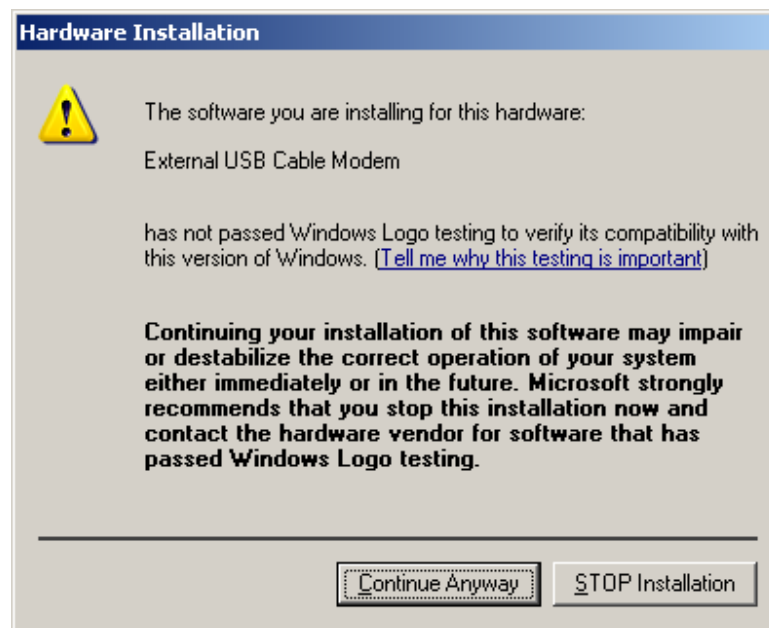
1. Connect USB cable from PC to cable modem.
2. Connect RF cable and power on Cable Modem. Wait until it register, it will take about 40 seconds to 4 minutes depends on network traffic. Cable Modem may reboot if you previously connect it through Ethernet port.
3. Windows will prompt new hardware found, insert the Driver CD into your CD-ROM drive.
4. Select "Yes, this time only" and then click **Next**.



5. Select "Install the software automatically (Recommended)" and then click **Next**.



6. Windows will locate the driver automatically. Please click **Continue Anyway** to continue the installation process.

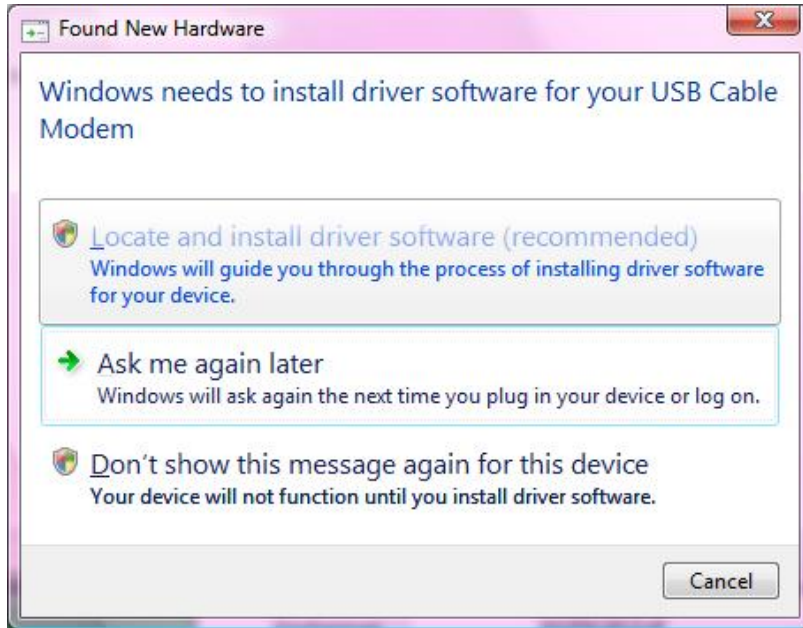


7. Windows shall find the location of USB driver and complete the installation. Click **Finish**.

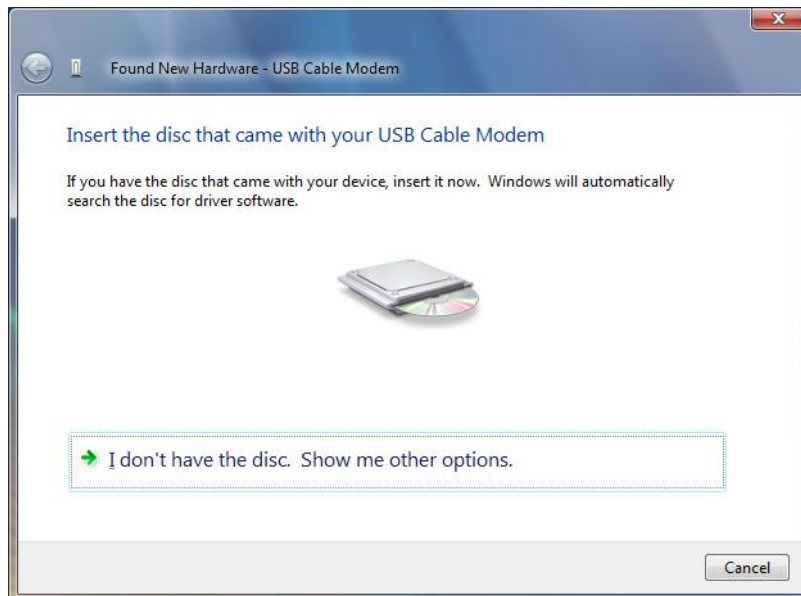


4.3 Windows Vista

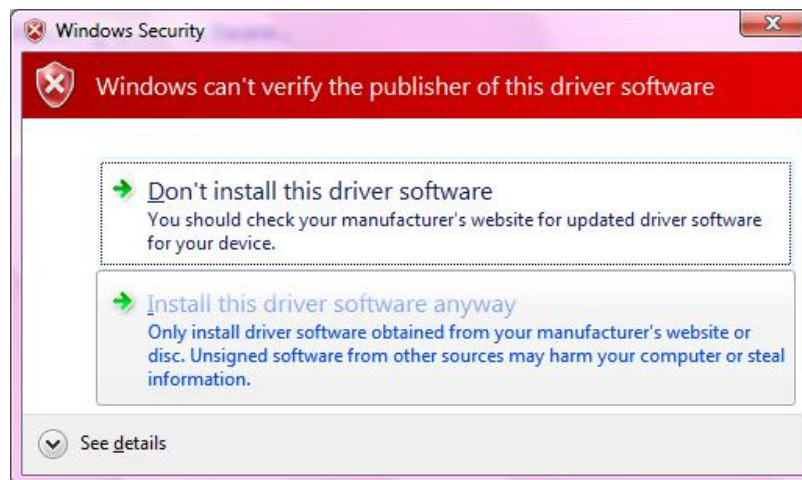
1. Connect USB cable from PC to cable modem.
2. Connect RF cable and power on Cable Modem. Wait until it register, it will take about 40 seconds to 4 minutes depends on network traffic. Cable Modem may reboot if you previously connect it through Ethernet port.
3. Windows will prompt new hardware found, insert the Driver CD into your CD-ROM drive.
4. Click "Locate and install driver software (recommended)" item



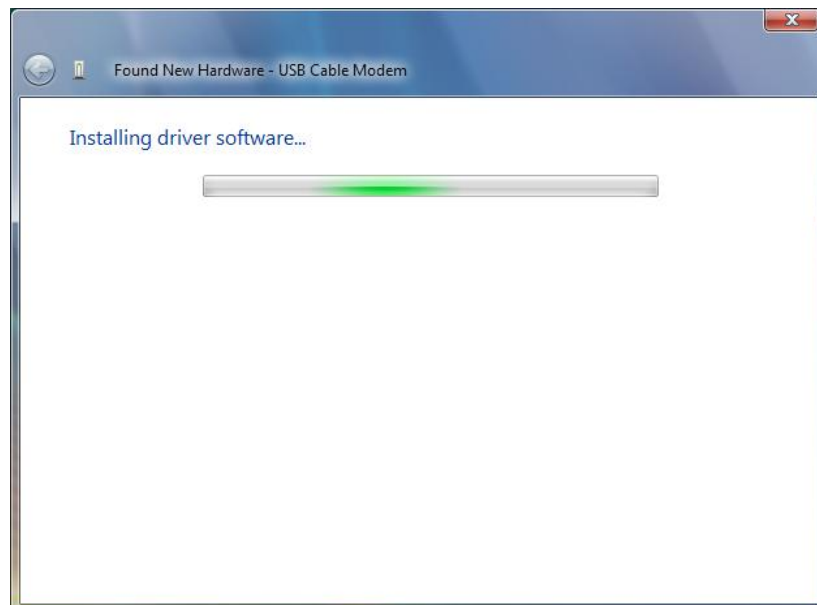
5. Insert the Driver disk that came with your cable modem into your CD-ROM drive. Windows Vista will automatically searched and found this driver.



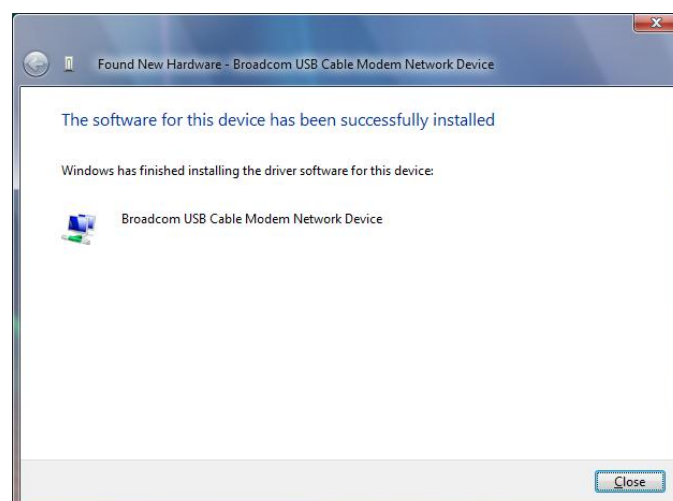
6. During the driver installation, your system may pop-up a dialogue as below window, just click "Install this driver software anyway".



7. During the driver installation, your system may pop-up a dialogue as below window, just click "Install this driver software anyway".



8. Click "Close" button to finish the driver installation.



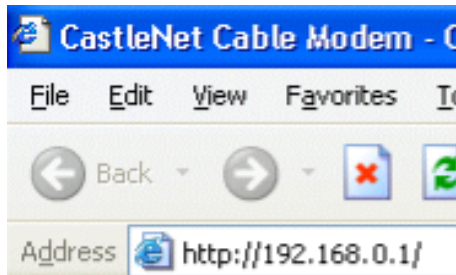
5. Web Management

For easy-changing the default setting or quick-checking diagnostics for troubleshooting, a Web-based GUI is built-in for your access.

5.1 Enter Modem's IP address

Use the following procedures to login to your CBV734EW.

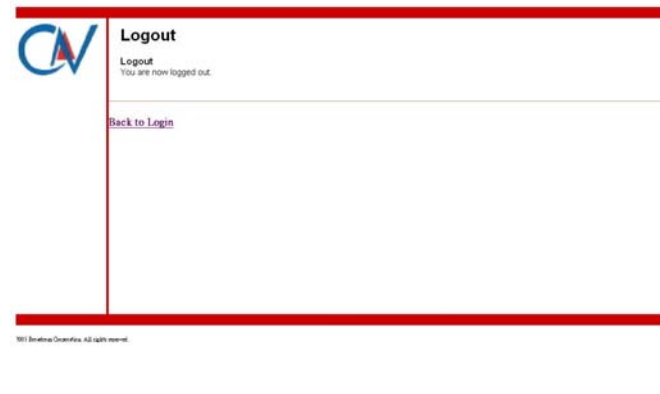
1. Open your web browser.
You may get an error message. This is normal. Continue on to the next step.
2. Type the default IP address of the CBV734EW (e.g. **192.168.0.1**) and press Enter.



3. The Log In page appears. Type the user name (**admin**) and your password (**password**) in the respective fields.



4. click the Logout button to leave the application.



There are seven categories in this web management including Status, Basic, Advanced and Firewall. The following sections describe their details.

5.2 Status

The Status page shows hardware and software information about the CBV734EW that may be useful to your cable service provider.

5.2.1 Software Status

The Software page shows how long the CBV734EW has operated since last being powered up, and some key information the CBV734EW received during the initialization process with your cable service provider.

The screenshot shows the web interface of the CBV734EW cable modem. At the top is a navigation bar with tabs: Status (highlighted), Basic, Advanced, Firewall, Parental Control, Wireless, MTA, and Logout. Below the navigation bar is the 'Status' heading and a 'Software' sub-heading. A description states: 'This page displays information on the current system software.' On the left side, there is a 'Software' button. The main content area displays two tables. The first table, titled 'Information', lists system details. The second table, titled 'Status', shows operational metrics.

Information	
Standard Specification Compliant	DOCSIS 2.0
Hardware Version	6879
Software Version	3.9.21.1
Cable Modem MAC Address	00:10:18:de:ad:01
Cable Modem Serial Number	dead01
CM certificate	Not installed

Status	
System Up Time	0 days 00h:19m:35s
Network Access	Allowed
Cable Modem IP Address	192.168.13.10

If Network Access shows “Allowed,” then your cable service provider has configured the CBV734EW to have Internet connectivity. If Network Access shows otherwise, you may not have Internet access, and please contact your cable service provider for assistance.

5.3 Basic

The Basic page contains the basic features of CBV734EW including Setup, DHCP and Backup

5.3.1 DHCP

The DHCP page allows you to activate/deactivate the DHCP server function of the CBV734EW, and, if the DHCP server is activated, to see DHCP leases it has provided.

The screenshot shows the 'Basic' configuration page for the CBV734EW. The 'DHCP' tab is selected. The DHCP Server is set to 'Yes'. The 'Starting Local Address' is 192.168.0.10, 'Number of CPEs' is 245, and 'Lease Time' is 3600. An 'Apply' button is present. Below, a table lists DHCP clients with columns for MAC Address, IP Address, Subnet Mask, Duration, Expires, and a 'Select' button. One client is listed with MAC 0018f3c92d2f, IP 192.168.0.10, Subnet Mask 255.255.255.000, Duration D:00 H:01 M:00 S:00, and Expires Tue Jun 26 08:59:29 2007. At the bottom, the 'Current System Time' is Tue Jun 26 08:58:44 2007, and a 'Force Available' button is shown.

MAC Address	IP Address	Subnet Mask	Duration	Expires	Select
0018f3c92d2f	192.168.0.10	255.255.255.000	D:00 H:01 M:00 S:00	Tue Jun 26 08:59:29 2007	

With this function activated, your cable service provider's DHCP server provides one IP address for the CBV734EW, and the CBV734EW's DHCP server provides IP addresses, starting at the address you set in **Starting Local Address** field, to your PCs. A DHCP server leases an IP address with an expiration time.

To set the maximum number of PCs to which the CBV734EW will issue IP addresses, enter it in the **Number of CPEs** box and then click **Apply**. (CPE is another term sometimes used for PC.)

The table on the bottom of this page shows the information of DHCP clients including the IP and MAC addresses of each PC. Since MAC addresses are unique and permanently fixed into hardware, you can identify any PC listed by its MAC address. The CBV734EW provides leases for 3600 seconds (default), and has an automatic renewal mechanism that will keep extending a lease as long as the associated PC remains active.

You can cancel an IP address lease by selecting it in the DHCP Client Lease Info list and then clicking the **Force Available** button. If you do this, you may have to perform a DHCP Renew on that PC, so it can obtain a new lease.

5.4 Advanced

The Advanced page allows you to enable/disable some advanced features of the CBV734EW.

5.4.1 Options

The Options page allows you to enable/disable some advanced features supported by CBV734EW.

Check the option you want to use and click **Apply** button to enable the function(s).

- **WAN Blocking:** To prevent others on the WAN side from being able to ping your CBV734EW. With WAN Blocking on, your CBV734EW will not respond to pings it receives, effectively “hiding” your gateway.
- **Isec PassThrough:** To enable IpSec type packets to pass through between WAN and LAN.
- **PPTP PassThrough:** To enable PPTP type packets to pass through between WAN and LAN.
- **Remote Config Management:** To make the Web Management pages of your CBV734EW accessible from the WAN side. Page access is limited to only those who know the CBV734EW access password you set in the **Status--Security** page.
When accessing the CBV734EW from a remote location, you must use HTTP port 8080 and your IP address. This is the "WAN IP address" that appears at the **Basic--Setup** page. For example, if this IP address were 211.20.15.28, you would navigate to [http:// 211.20.15.28:8080](http://211.20.15.28:8080) to reach the CBV734EW's Web Management page from a remote location.
- **Multicast Enable:** To enable multicast traffic to pass through between WAN and LAN. You may need to enable this to see some types of broadcast streaming and content on the Internet, such as webcasting of a popular live event.
- **UPnP Enable:** UPnP (Universal Plug and Play) offers pervasive peer-to-peer network connectivity of PCs of all form factors, intelligent appliances, and wireless devices. UPnP architecture leverages TCP/IP and the Web to enable seamless proximity networking in addition to control and data transfer among networked devices in the home, office, and everywhere in between.

5.4.2 IP Filtering

The IP Filtering page enables you to enter the IP address ranges of PCs on your LAN that you don't permit to have outbound access ability to the WAN. These PCs can still communicate with each other on your LAN, but packets they originate to WAN addresses are blocked by the CBV734EW.

The screenshot shows the 'Advanced' configuration page for the CBV734EW. The 'IP Filtering' tab is selected. The page title is 'Advanced' and the sub-title is 'IP Filtering'. A description states: 'This page allows configuration of IP address filters in order to block internet traffic to specific network devices on the LAN.' On the left, there is a sidebar with buttons for 'Options', 'IP Filtering' (highlighted), 'MAC Filtering', 'Port Filtering', 'Forwarding', 'Port Triggers', and 'DMZ Host'. The main content area contains a table titled 'IP Filtering' with three columns: 'Start Address', 'End Address', and 'Enabled'. The table has 10 rows, each with a text input field for the start address, a text input field for the end address, and a checkbox for the 'Enabled' status. All start and end address fields are pre-filled with '192.168.0.0'. Below the table is an 'Apply' button.

Start Address	End Address	Enabled
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>
192.168.0.0	192.168.0.0	<input type="checkbox"/>

To enable IP Filtering feature of CBV734EW, check the **Enable** box and click **Apply** button.

5.4.3 MAC Filtering

The MAC Filtering page enables you to enter the MAC address of specific PCs on your LAN that you don't permit to have outbound access ability to the WAN. These PCs can still communicate with each other through the CBV734EW, but packets they send to WAN addresses are blocked.

The screenshot shows the 'Advanced' configuration page for the CBV734EW. The 'MAC Filtering' tab is selected. The page title is 'Advanced' and the sub-title is 'MAC Filtering'. A description states: 'This page allows configuration of MAC address filters in order to block internet traffic to specific network devices on the LAN.' On the left, there is a sidebar with buttons for 'Options', 'IP Filtering', 'MAC Filtering' (highlighted), 'Port Filtering', 'Forwarding', 'Port Triggers', and 'DMZ Host'. The main content area contains a form titled 'MAC Filtering'. It includes a text input field for 'MAC Addresses (example: 01:23:45:67:89:AB)' and an 'Add MAC Address' button. Below this is a large text area for entering multiple addresses. At the bottom of the text area, it says 'Addresses entered: 0/20'. Below the text area are two buttons: 'Remove MAC Address' and 'Clear All'. At the very bottom, there is a small copyright notice: '©2005 Broadcom Corporation. All rights reserved.'

To enable MAC filtering feature of CBV734EW, enter the MAC address of the LAN device and click **Apply** button.

5.4.4 Port Filtering

The Port Filtering page allows you to enter ranges of destination ports (applications) that you don't want your LAN PCs to send packets to. Any packets your LAN PCs send to these destination ports will be blocked. For example, you could block access to worldwide web browsing (HTTP port 80) but still allow email service (SMTP port 25 and POP3 port 110).

The screenshot shows the 'Advanced' configuration page for Port Filtering. The left sidebar contains navigation buttons: Options, IP Filtering, MAC Filtering, Port Filtering (highlighted), Forwarding, Port Triggers, and DMZ Host. The main content area is titled 'Port Filtering' and includes a description: 'This page allows configuration of port filters in order to block specific internet services to all devices on the LAN.' Below this is a table with columns: Start Port, End Port, Protocol, and Enabled. The table contains 10 rows, each with '1' in the Start Port column, '65535' in the End Port column, 'Both' in the Protocol column, and an unchecked checkbox in the Enabled column. An 'Apply' button is located at the bottom of the table.

Start Port	End Port	Protocol	Enabled
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>
1	65535	Both	<input type="checkbox"/>

To enable port filtering, enter the **Start port** and **End port** for each range. Then select its protocol from the drop-down list and check the **Enable** box, and click **Apply** button. To block only one port, set both Start and End ports the same.

5.4.5 Forwarding

For communications between LAN and WAN, the CBV734EW normally only allows you to originate an IP connection with a PC on the WAN; it will ignore attempts of the WAN PC to originate a connection onto your PC. This protects you from malicious attacks from outsiders. However, sometimes you may wish for anyone outside to be able to originate a connection to a particular PC on your LAN if the destination port (application) matches one you specify. The Forwarding page allows you to specify up to 10 rules.

The screenshot shows the 'Advanced' configuration page for Forwarding. The left sidebar contains navigation buttons: Options, IP Filtering, MAC Filtering, Port Filtering, Forwarding (highlighted), Port Triggers, and DMZ Host. The main content area is titled 'Forwarding' and includes a description: 'This allows for incoming requests on specific port numbers to reach web servers, FTP servers, mail servers, etc. so they can be accessible from the public internet. A table of commonly used port numbers is also provided.' Below this is a table with columns: Local IP Address, Start Port, End Port, Protocol, and Enabled. The table contains 10 rows, each with '192.168.0.1' in the Local IP Address column, '0' in the Start Port column, '0' in the End Port column, 'Both' in the Protocol column, and an unchecked checkbox in the Enabled column. To the right of the table is a list of applications and their corresponding ports: HTTP (80), FTP (21), FTP (20), SMTP (25), POP3 (110), NNTP (119), IRC (6660), Telnet (23), SSH (22), Finger (79), SNMP (161), HSNMP (43), LDAP (389), and LDAP (636). An 'Apply' button is located at the bottom of the table.

Local IP Address	Start Port	End Port	Protocol	Enabled
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>
192.168.0.1	0	0	Both	<input type="checkbox"/>

Application	Port
HTTP	80
FTP	21
FTP	20
SMTP	25
POP3	110
NNTP	119
IRC	6660
Telnet	23
SSH	22
Finger	79
SNMP	161
HSNMP	43
LDAP	389
LDAP	636

Using the Port Forwarding page, you can provide local services (web servers, FTP servers, mail servers, etc) for people on the Internet or play Internet games. A table of commonly used port numbers is also provided.

5.4.6 Port Triggers

The Port Triggers page allows you to configure dynamic triggers to specific devices on the LAN. This allows for special applications that require specific port numbers with bi-directional traffic to function properly. Applications such as video conferencing, voice, gaming, and some messaging program features may require these special settings.

The screenshot shows the 'Advanced' settings page with the 'Port Triggers' tab selected. The page title is 'Port Triggers' with a description: 'This page allows configuration of dynamic triggers to specific devices on the LAN. This allows for special applications that require specific port numbers with bi-directional traffic to function properly. Applications such as video conferencing, voice, gaming, and some messaging program features may require these special settings.' On the left is a sidebar with navigation buttons: Options, IP Filtering, MAC Filtering, Port Filtering, Forwarding, Port Triggers (highlighted), and DMZ Host. The main content area contains a table for configuring port triggers.

Port Triggering					
Trigger Range		Target Range		Protocol	Enable
Start Port	End Port	Start Port	End Port		
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>
0	0	0	0	Both	<input type="checkbox"/>

Apply

Port Triggering is an elegant mechanism that does the forwarding for you, each time you play the game. You can specify up to 10 port ranges on which to trigger.

5.4.7 DMZ Host

The DMZ page allows you to configure a specific network device to be exposed or visible directly to the WAN (public Internet). Setting a host on your local network as demilitarized zone (DMZ) forwards any network traffic that is not redirected to another host via the port forwarding feature to the IP address of the host (PC). This designates one PC on your LAN that should be left accessible to all PCs from the WAN side for all ports. For example, if you locate a HTTP server on this machine, anyone will be able to access that HTTP server by using your CBV734EW's IP address as the destination. This may be used when problem applications do not work with port triggers. The setting of "0" indicates NO DMZ PC.

The screenshot shows the 'Advanced' settings page with the 'DMZ Host' tab selected. The page title is 'DMZ Host (Exposed Host)' with a description: 'This page allows configuration of a specific network device to be exposed or visible directly to the WAN (public internet). This may be used when problem applications do not work with port triggers. Entering a "0" means there are no exposed hosts.' On the left is a sidebar with navigation buttons: Options, IP Filtering, MAC Filtering, Port Filtering, Forwarding, Port Triggers, and DMZ Host (highlighted). The main content area contains a single text input field for the DMZ Address.

DMZ Address 192.168.0.0

Apply

5.5 Firewall

The CBV734EW provides built-in firewall functions, enabling you to protect the system against denial of service (DoS) attacks and other unwelcome or malicious accesses to your LAN.

5.5.1 Local Log

The Local Log page allows you to configure the firewall event log reported via email alert, and these attack records are also visible in the table on the bottom of this page.

Firewall

Local Log
This page allows configuration of Firewall event log reporting via email alerts and a local view of the attacks on the system.

Contact Email Address

SMTP Server Name

E-mail Alerts ☐ Enable

Description	Count	Last Occurrence	Target	Source
-------------	-------	-----------------	--------	--------

Specifies the e-mail address and its SMTP of the administrators who should receive notices of any attempted firewall violations. Type the addresses in standard Internet e-mail address format, for example, `yourname@onecompany.com`. Then check the **Enable** box to enable the alert feature.

Click **E-mail Log** to immediately send the email log. Click **Clear Log** to clear the table of entries for a fresh start.

5.6 Parental Control

5.6.1 User Setup

This page allows configuration of users. "White List Only" feature limits the user to visit only the sites, specified in the Allowed Domain List of his/her content rule.

The screenshot shows the 'Parental Control' section of a web interface. The top navigation bar includes 'Status', 'Basic', 'Advanced', 'Firewall', 'Parental Control' (selected), 'Wireless', 'MTA', and 'Logout'. On the left, a sidebar contains 'User Setup' (selected), 'Basic', 'ToD Filter', and 'Local Log'. The main content area is titled 'Parental Control' and 'User Setup'. It includes a description: 'This page allows configuration of users. "White List Only" feature limits the user to visit only the sites, specified in the Allowed Domain List of his/her content rule.' Below this is the 'User Configuration' section with fields for 'Add User', 'User Settings' (including a dropdown for '1 Default', an 'Enable' checkbox, and a 'Remove User' button), 'Password', 'Re-Enter Password', 'Trusted User' (with an 'Enable' checkbox), 'Content Rule' (with a 'White List Access Only' checkbox and a dropdown for '1 Default'), 'Time Access Rule' (with a 'No rule set' dropdown), 'Session Duration' (0 min), and 'Inactivity time' (0 min). An 'Apply' button is at the bottom. The 'Trusted Computers' section explains that users can be assigned to computers to bypass parental control, showing a list of IP addresses (00.00.00.00.00.00) and an 'Add' button. A 'No Trusted Computers' section has a 'Remove' button. At the bottom, a copyright notice reads: '©2003 Broadcom Corporation. All rights reserved.'

5.6.2 Basic Setup

This page allows basic selections of rules which block certain Internet content and certain Web sites. When you change your Parental Control settings, you must click on the appropriate "Apply", "Add" or "Remove" button for your new setting to take effect. If you refresh your browser's display, you will see the currently active settings.

The screenshot shows the 'Parental Control' section of a web interface. The top navigation bar includes 'Status', 'Basic', 'Advanced', 'Firewall', 'Parental Control' (selected), 'Wireless', 'MTA', and 'Logout'. On the left, a sidebar contains 'User Setup', 'Basic' (selected), 'ToD Filter', and 'Local Log'. The main content area is titled 'Parental Control' and 'Basic Setup'. It includes a description: 'This page allows basic selection of rules which block certain Internet content and certain Web sites. When you change your Parental Control settings, you must click on the appropriate "Apply", "Add" or "Remove" button for your new settings to take effect. If you refresh your browser's display, you will see the currently active settings.' Below this is the 'Parental Control Activation' section with a checkbox for 'Enable Parental Control' and an 'Apply' button. The 'Content Policy Configuration' section includes an 'Add New Policy' button, a 'Content Policy List' (with a dropdown for '1 Default' and a 'Remove Policy' button), and three lists: 'Keyword List' (containing 'anonymizer'), 'Blocked Domain List' (containing 'anonymizer.com'), and 'Allowed Domain List'. Each list has 'Add', 'Remove', and 'Add Allowed Domain' buttons. The 'Override Password' section explains that users can override blocks by entering a password, with fields for 'Password', 'Re-Enter Password', 'Access Duration' (30), and an 'Apply' button. At the bottom, a copyright notice reads: '©2003 Broadcom Corporation. All rights reserved.'

5.6.3 Time of Day Access Policy

This page allows configuration of time access policies to block all internet traffic to and from specific network devices based on time of day setting.

The screenshot shows the 'Parental Control' section of the modem's web interface. The top navigation bar includes 'Status', 'Basic', 'Advanced', 'Firewall', 'Parental Control' (highlighted), 'Wireless', 'MTA', and 'Logput'. On the left, a sidebar contains 'User Setup', 'Basic', 'ToD Filter' (highlighted), and 'Local Log'. The main content area is titled 'Parental Control' and 'Time of Day Access Policy'. It explains that this page allows configuration of time access policies to block all internet traffic to and from specific network devices based on time of day settings. Below this, the 'Time Access Policy Configuration' section prompts the user to create a new policy by giving it a descriptive name, such as 'Weekend' or 'Working Hours', with an 'Add New Policy' button. The 'Time Access Policy List' section shows a dropdown menu with 'No filters entered', an 'Enabled' checkbox, and a 'Remove' button. Under 'Days to Block', there are checkboxes for 'Everyday', 'Sunday', 'Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', and 'Saturday'. Under 'Time to Block', there is an 'All day' checkbox and a time range selector with 'Start' and 'End' fields, each with hour, minute, and AM/PM dropdowns, and an 'Apply' button.

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5.6.4 Event Log

This page displays Parental Control event log reporting.

The screenshot shows the 'Parental Control' section of the modem's web interface, specifically the 'Event Log' page. The top navigation bar is the same as the previous page. The left sidebar is also the same, with 'Local Log' highlighted. The main content area is titled 'Parental Control' and 'Event Log'. It states that this page displays Parental Control event log reporting. Below this, there is a table with the following headers: 'List Occurrence', 'Action', 'Target', 'User', and 'Source'. Below the table, there is a 'Clear Log' button.

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5.7 Wireless

5.7.1 Basic

The Wireless Connection Status page allows configuration of the Access Point parameters including the SSID and channel number.

The screenshot shows the 'Wireless' configuration page with the 'Basic' tab selected. The page title is '802.11b/g Basic' and it states: 'This page allows configuration of the Access Point parameters, including the SSID and channel number.' The configuration fields include: Wireless MAC Address (00-16-38-EA-A5-45), Network Name (SSID) (BROADCOM), Network Type (Open), Country (USA), Channel (1), Current (1), and Interface (Enabled). There are 'Apply' and 'Restore Wireless Defaults' buttons. Below this is the 'SecureEasySetup' section with the text 'Use these buttons to manage your SecureEasySetup network.' and 'Create SES Network' and 'Open SES Window' buttons. A sidebar on the left contains links for Basic, Security, Access Control, Advanced, Bridging, WMM, and Guest Network. The top navigation bar includes Status, Basic, Advanced, Firewall, Parental Control, Wireless, MTA, and Logout. The footer shows '©2003 Broadcom Corporation. All rights reserved.'

5.7.2 Security

This page allows configuration of the WEP keys and/or passphrase.

The screenshot shows the 'Wireless' configuration page with the 'Security' tab selected. The page title is '802.11b/g Privacy' and it states: 'This page allows configuration of the WEP keys and/or passphrase.' The configuration is divided into two main sections. The left section includes: WPA (Disabled), WPA-PSK (Enabled), WPA2 (Disabled), WPA2-PSK (Disabled), WPA/WPA2 Encryption (TKIP), WPA Pre-Shared Key (masked), a 'Show Key' checkbox, RADIUS Server (192.168.1.1), RADIUS Port (802), RADIUS Key, Group Key Rotation Interval (0), WPA/WPA2 Re-auth Interval (3600), WEP Encryption (Disabled), Shared Key Authentication (Optional), 802.1x Authentication (Disabled), four Network Key fields (1-4), Current Network Key (3), and a PassPhrase field. The right section includes: WiFi Protected Setup (WPS) with WPS Config (Enable), Button Mode (WPS), Device Name (BroadcomAP), STA PIN (94380507), an 'Apply' button, WPS Method (PIN), and a 'Start WPS' button. There is also a 'WPS Status' field. At the bottom, there is a 'Generate WEP Keys' button and an 'Apply' button. A sidebar on the left contains links for Basic, Security, Access Control, Advanced, Bridging, WMM, and Guest Network. The top navigation bar includes Status, Basic, Advanced, Firewall, Parental Control, Wireless, MTA, and Logout. The footer shows '©2003 Broadcom Corporation. All rights reserved.'

5.7.3 Access Control

This page allows configuration of the Access Control to the AP as well as on the connected clients.

The screenshot shows the 'Wireless' configuration page with the 'Access Control' tab selected. The page title is '802.11b/g Access Control'. Below the title, it states: 'This page allows configuration of the Access Control to the AP as well as status on the connected clients.' The main configuration area includes a 'MAC Restrict Mode' dropdown set to 'Disabled' and a table for 'MAC Addresses' with 8 rows and 2 columns. An 'Apply' button is located below the table. At the bottom, the 'Connected Clients' section shows a table with columns: 'MAC Address', 'Type', 'IP Address', and 'Host Name'. Below this table, it states 'No wireless clients are connected.' The left sidebar contains navigation buttons: 'Basic', 'Security', 'Access Control' (highlighted), 'Advanced', 'Bridging', 'WMM', and 'Guest Network'. The top navigation bar includes: 'Status', 'Basic', 'Advanced', 'Firewall', 'Parental Control', 'Wireless' (highlighted), 'MTA', and 'Logout'. The footer contains the copyright notice: '©2005 Broadcom Corporation. All rights reserved.'

5.7.4 Advanced

This page allows configuration of data rates and WiFi thresholds.

The screenshot shows the 'Wireless' configuration page with the 'Advanced' tab selected. The page title is '802.11b/g Advanced'. Below the title, it states: 'This page allows configuration of data rates and WiFi thresholds.' The main configuration area includes several settings: '54g™ Mode' (dropdown, 54g Auto), 'Basic Rate Set' (dropdown, Default), '54g™ Protection' (dropdown, Auto), 'XPress™ Technology' (dropdown, Disabled), 'Afterburner™ Technology' (dropdown, Disabled), 'Rate' (dropdown, Auto), 'Output Power' (dropdown, 100%), 'Beacon Interval' (text input, 100), 'DTIM Interval' (text input, 1), 'Fragmentation Threshold' (text input, 2346), and 'RTS Threshold' (text input, 2347). An 'Apply' button is located at the bottom. The left sidebar contains navigation buttons: 'Basic', 'Security', 'Access Control', 'Advanced' (highlighted), 'Bridging', 'WMM', and 'Guest Network'. The top navigation bar includes: 'Status', 'Basic', 'Advanced', 'Firewall', 'Parental Control', 'Wireless' (highlighted), 'MTA', and 'Logout'. The footer contains the copyright notice: '©2005 Broadcom Corporation. All rights reserved.'

5.7.5 Bridging

This page allows configuration of WDS features.

The screenshot shows the 'Wireless' configuration page with the 'Bridging' tab selected. The page title is 'Wireless Bridging' with a subtitle 'This page allows configuration of WDS features.' On the left is a navigation menu with buttons for Basic, Security, Access Control, Advanced, Bridging (highlighted), WMM, and Guest Network. The main content area has a 'Wireless Bridging' dropdown menu set to 'Disabled' and four empty text boxes for 'Remote Bridges'. An 'Apply' button is at the bottom. The footer contains the copyright notice '©2005 Broadcom Corporation. All rights reserved.'

5.7.6 WMM

This page allows configuration of the Wi-Fi Multimedia QoS.

The screenshot shows the 'Wireless' configuration page with the 'WMM' tab selected. The page title is '802.11b/g Wi-Fi Multimedia' with a subtitle 'This page allows configuration of the Wi-Fi Multimedia QoS.' On the left is a navigation menu with buttons for Basic, Security, Access Control, Advanced, Bridging, WMM (highlighted), and Guest Network. The main content area has three toggle switches: 'WMM Support' (On), 'No-Acknowledgement' (Off), and 'Power Save Support' (On), followed by an 'Apply' button. Below these are two tables. The first table, 'EDCA AP Parameters', has columns for AC, TXOP, CWmin, CWmax, AIFS, and Priority, with rows for AC_BK, AC_BE, AC_VI, and AC_VO. The second table, 'EDCA STA Parameters', has the same columns and rows. The footer contains the copyright notice '©2005 Broadcom Corporation. All rights reserved.'

EDCA AP Parameters	TXOP	CWmin	CWmax	AIFS	Priority
AC_BK	15	63	3	0	0
AC_BE	15	1023	7	0	0
AC_VI	7	15	1	6016	3008
AC_VO	3	7	1	3264	1504

EDCA STA Parameters	TXOP	CWmin	CWmax	AIFS	Priority
AC_BK	15	1023	3	0	0
AC_BE	15	1023	7	0	0
AC_VI	7	15	2	6016	3008
AC_VO	3	7	2	3264	1504

5.7.7 Guest Network

This page allows configuration of a guest network..

Status

Basic

Advanced

Firewall

Parental Control

Wireless

MTA

Logout

Basic

Security

Access Control

Advanced

Bringing

WMM

Guest Network

Wireless

802.11b/g Guest Network

This page allows configuration of a guest network.

Guest Network: BROADCAST_GUEST_0 (02:16:38:EA:A5:3C)

Guest WiFi Security Settings

Guest Network: Enabled

Guest Network Name (SSID): BROADCAST_GUEST_0

Closed Network: Disabled

WPA: Disabled

WPA-PSK: Disabled

WPA2: Disabled

WPA2-PSK: Disabled

WPA/WPA2 Encryption: Disabled

WPA Pre-Shared Key:

RADIUS Server: 10.0.0.0

RADIUS Port: 1812

RADIUS Key:

Group Key Rotation Interval:

WPA/WPA2 Re-auth Interval: 300

WEP Encryption: Disabled

Shared Key Authentication: Optional

802.1x Authentication: Disabled

Network Key 1:

Network Key 2:

Network Key 3:

Network Key 4:

Current Network Key:

PassPhrase:

Generate WEP Keys

Apply

Guest LAN Settings

DHCP Server: Enabled

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Lease Pool Start: 192.168.1.10

Lease Pool End: 192.168.1.99

Lease Time: 86400

Apply

Restore Guest Network Defaults

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5.8 MTA

Section MTA has 5 sub-items, which indicate the status of MTA. These information can help you to understand the parameters of MTA operation.

5.8.1 Status

This page displays initialization status of the MTA.

Status

Basic

Advanced

Firewall

Parental Control

Wireless

MTA

Logout

Status

MTA

Status

This page displays initialization status of the MTA.

Status

Startup Procedure

Task	Status
Telephony DHCP	In Progress
Telephony Security	[Error: FAIL]
Telephony TFTP	In Progress
Telephony Call Server Registration	L1: No Security Association / L2: No Security Association
Telephony Registration Complete	In Progress

MTA Line State

Line 1 On-Hook

Line 2 On-Hook

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Appendix: Cable Modem Specification

Table 1. RF Downstream Specification (DOCSIS)

Parameter	Value	Notes
Frequency range	88 MHz to 860 MHz +/- 30 kHz	
Demodulation	64QAM. 256QAM	
Input power range	-15 dBmV to +15 dBmV	One Channel
Symbol Rate	5.056941 Msym/sec (30 Mbps) 5.360537 Msym/sec (43 Mbps)	64QAM 256QAM
Bandwidth	6 MHz	
Total Input Power	<30 dBmV	
Input Impedance	75 Ohms	

Table 2. RF Upstream Specification (DOCSIS)

Parameter	Value	
Frequency Range	5 MHz to 42 MHz	
Modulation	QPSK, 8QAM, 16QAM, 32QAM, 64QAM, 128QAM (SCDMA only)	
Symbol Rate	TDMA: 160K, 320K, 640K, 1280K, 2560K, 5120Ksym/sec S-CDMA: 1280K, 2560K, 5120Ksym/sec	
Bandwidth	TDMA: 200K, 400K, 800K, 1600K, 3200K, 6400KHz S-CDMA: 1600K, 3200K, 6400KHz	
Output power	TDMA	QPSK: 8 ~ 58 dBmV 8/16QAM: 8 ~ 55 dBmV 32/64QAM: 8 ~ 54 dBmV
	S-CDMA	QPSK, 8/16/32/64/128QAM: 8 ~ 53 dBmV
Output Impedance	75 Ohms	

Table 3. RF Downstream Specification (for EuroDOCSIS system)

Parameter	Value	Notes
Frequency Range	108 MHz to 862 MHz	
Demodulation	64QAM. 256QAM	
Input power range	+13dBmV to -17dBmV (65QAM) +17dBmV to -13dBmV (256QAM)	
Symbol Rate	056941 Msym/sec (30 Mbps) 5.360537 Msym/sec (43 Mbps)	64QAM 256QAM
Bandwidth	8MHz	
Total Input Power	<30 dBmV	
Input Impedance	75 Ohms	

Table 4. RF Upstream Specification (for EuroDOCSIS system)

Parameter	Value	
Frequency Range	5 MHz to 65 MHz	
Modulation	QPSK, 8QAM, 16QAM, 32QAM, 64QAM, 128QAM (TCM only)	
Symbol Rate	TDMA: 160K, 320K, 640K, 1280K, 2560K, 5120Ksym/sec S-CDMA: 1280K, 2560K, 5120Ksym/sec	
Bandwidth	TDMA: 200K, 400K, 800K, 1600K, 3200K, 6400KHz S-CDMA: 1600K, 3200K, 6400KHz	
Output power	TDMA	QPSK: 8 ~ 58 dBmV 8/16QAM: 8 ~ 55 dBmV 32/64QAM: 8 ~ 54 dBmV
	S-CDMA	QPSK, 8/16/32/64/128QAM: 8 ~ 53 dBmV
Output Impedance	75 Ohms	

Table 5. Electrical Specification

Parameter	Measured Value	Notes
Input Voltage	15VDC/1A	
Power consumption	< 9.5W	With AC adaptor

Table 6. Physical Specification

Parameter	Value
Size	155 mm (L) x 37mm(W) x 260 mm (H)
Weight	360g +/- 10g (Modem only)

Table 7. Environmental Specification

Parameter	Value
Operating Temperature	0 °C to +40 °C
Operating Relative Humidity	10% to 90% (Non-condensing)
Operating Altitude	-100 to +7,000 feet
Storage Temperature	-10 °C to +60 °C